PATENT COOPERATION TREATY

PCT

REC'D 26 JUL 2006

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

| | | | | |
|--|--|---|--|--|
| Applicant's or agent's file reference 2406-3WO | FOR FURTHER A | CTION | See Form PCT/IPEA/416 | |
| International application No. PCT/CA2005/000359 | International filing do | | Priority date (day/month/year) 09 March 2004 (09-03-2004) | |
| International Patent Classification (IPC) or national classification and IPC IPC: F01K 27/00 (2006.01), F01D 15/10 (2006.01), F17D 1/04 (2006.01) | | | | |
| Applicant TRI GAS & OIL TRADE SA | | | | |
| 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. | | | | |
| 2. This REPORT consists of a total of | 4 sheets, includ | ling this cover sheet. | | |
| 3. This report is also accompanied by AN | NEXES, comprising: | | | |
| a. [X] (sent to the applicant and | | ureau) a total of 2 | sheets, as follows: | |
| 1 | | - | amended and are the basis of this report | |
| [X] sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). | | | | |
| [] sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. 1 and the Supplemental Box. | | | | |
| b. [] (sent to the International | | | | |
| , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). | | | | |
| 4 This report contains indications relatin | g to the following item | e. | | |
| 4. This report contains indications relating to the following items: [X] Box No. I Basis of the report | | | | |
| [] Box No. II Priority | | | | |
| [] Box No. III Non-establishme | ent of opinion with rega | ard to novelty, inventive ste | p and industrial applicability | |
| []Box No. IV Lack of unity of | | | | |
| [X] Box No. V Reasoned statem | [X] Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; | | | |
| citations and explanations supporting such statement | | | | |
| [] Box No. VI Certain documents cited | | | | |
| [] Box No. VII Certain defects in the international application | | | | |
| [X] Box No. VIII Certain observations on the international application | | | | |
| Date of submission of the demand 07 October 2005 (07-10-2005) | | Date of completion of this report 4 July 2006 (04-07-2006) | | |
| Name and mailing address of the IPEA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001(819)953-2476 | | Authorized officer Julien Daigle (819) 934-4273 | | |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No. PCT/CA2005/000359

| Box No. I | Basis of the | e report | , | |
|-------------------------------|--|---|--|---|
| 1. With | | anguage, this report is based of | on: | |
| ! | | nal application in the language | | |
| | | f the international application | | |
| | | nished for the purposes of: | | , which is the language of a |
| E | | onal search (Rules 12.3(a) and | d 23.1(b)) | |
| [| | ion of the international applica | | |
| [| | onal preliminary examination | | |
| annexe [] tl | regard to the electiving Office is ed to this reported to this reported to the international to the end to the | lements of the international ap in response to an invitation writ: al application as originally file | oplication, this report is based on <i>(replander Article 14 are referred to in this r</i> | acement sheets which have been furnished eport as "originally filed" and are not |
| | he description: | | | |
| | X] pages | <u>1-5</u> | | as originally filed/furnished |
| į. | X] pages* | | received by this Authority on | - · |
| [| J pages* | | received by this Authority on | |
| [X] th | ne claims: | | · | |
| į. |] pages | | | as originally filed/furnished |
| [/ | X] pages* | <u>6</u> | | nny statement) under Article 19 |
| L |] pages* | | received by this Authority on | |
| [[[]] |] pages* | | received by this Authority on | |
| | e drawings: | | | |
| | X] pages | 1 | | as originally filed/furnished |
| r F~ | [pages* | <u>2</u> | received by this Authority on | 10 May 2006 (10-05-2006) |
| L Tla |] pages* | ** | received by this Authority on | |
| Ljas | sequence nsun; | g and/or any related table(s) - | see Supplemental Box Relating to Seq | quence Listing. |
| . [] Th | ne amendments | - 11 ₄₋ -3 to 21 11 o | | |
| . r 1 *** | | s have resulted in the cancellat | tion of: | |
| L L | the claims, | ption, pages | ; | |
| Ł F | | , Nos. ngs, sheets/figs | | |
| ı. F | | igs, sneets/figs ace listing (specify): | | |
| | | | -0. | |
| L |] any taoroto | s) related to sequence listing (s | specify): | |
| [] Thi sin [[[| the descript the claims, | tion, pages | the amendments annexed to this report the disclosure as filed, as indicated in the | rt and listed below had not been made, he Supplemental Box (Rule 70.2(c)). |
| . 1 | | ce listing (specify): | | |
| [] | | related to sequence listing (sp | pecify): | |
| | | - 5(1 | | |
| | | | ÷ | |
| If item 4 a | pplies, some oi | er all of those sheets may be mo | arked "superseded." | |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No. PCT/CA2005/000359

| Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
|-----------|---|
| | |

| <u> </u> | | • | Pro sing statement | |
|----------|-------------------------------|--------|--------------------|-------------|
| 1. | . Statement | | | |
| | Novelty (N) | Claims | <u>1-3</u> | YES |
| | | Claims | none | NO |
| | Inventive step (IS) | Claims | <u>1-3</u> | YES |
| | | Claims | none | NO |
| | Industrial applicability (IA) | Claims | <u>1-3</u> | YES |
| | | Claims | none | NO |
| | | | | |
| | | | | |

2. Citations and explanations (Rule 70.7)

Reference is made to the following document:

D1: US 6,167,692 B1 (GENERAL ELECTRIC CO.)

02 January 2001 (02-01-2001)

Novelty and Inventive Step

Claims 1-3 do meet the requirements of PCT Articles 33(2) and 33(3). Document D1, considered the closest prior art, discloses a fuel gas expander system in a gas distribution system of a power plant. The distribution system comprises a high pressure natural gas source being channelled in a primary turbo-expander, said primary expander driving a generator designed for various purposes (electrical, mechanical, etc...). D1 further discloses an intermediate turbo-expander further expanding a portion of said fuel gas expanded in said primary expander wherein each of said expanders have heat exchangers located upstream of them for pre-heating the gas prior to expansion. D1 does not disclose alone, or in combination with any other document, the above fuel gas expander system further including a heat exchanger located downstream of said primary expander for extracting cold temperature for use in one of refrigeration

Industrial Applicability
Claims 1-3 do meet the requirements of PCT Article 33(4).

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| | | TC1/CA2003/000339 | |
|---|---|-------------------|--|
| Box No. VIII | Certain observations on the international application | | |
| The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made: | | | |
| The description does not comply with PCT Article 5. The expression "there potentially could be a net energy gain, as opposed to a net energy loss" is a misleading concept with respect to the theory of conservation of energy and perpetual motion. | | | |
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THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

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1. A method of generating power from a pressure control station of a natural gas distribution system, comprising the steps of:

channelling natural gas entering the pressure control station into a turbine (52) which is powered by expansion of the natural gas as the pressure of the natural gas is reduced; and capturing the output of the turbine (52) for application for useful purposes;

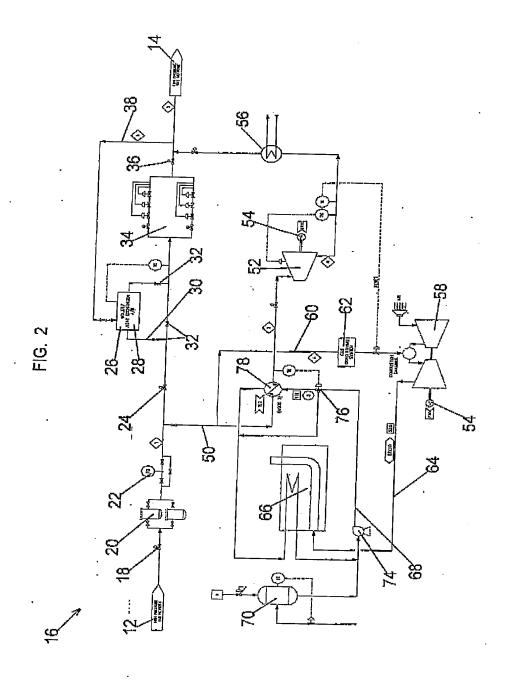
- channelling natural gas exiting the turbine (52) through a first heat exchanger (56) to extract cold temperature, accompanying the reduction in pressure, from the natural gas for use in one of refrigeration or air conditioning.
- 2. The method as defined in Claim 1, the turbine (52) being used to power an electrical generator (54).
 - 3. The method as defined in Claim 1, using a portion of the natural gas to power a gas fuelled turbine power generator (58), passing the exhaust gases from the gas fuelled turbine power generator (58) through a first heat exchanger (66) to preheat a liquid and then passing the liquid through a second heat exchanger (78) to preheat the natural gas being channelled into the turbine (52) and capturing the output of the gas fuelled turbine power generator (58) for application for useful purposes.

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